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JC644 U.S. PTODocket No.
14689.3.1

Total Pages in this Submission

UTILITY PATENT APPLICATION TRANSMITTAL
(Small Entity)*(Only for new nonprovisional applications under 37 CFR 1.53(b))***TO THE ASSISTANT COMMISSIONER FOR PATENTS****Box Patent Application**
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for invention entitled:

INTERACTIVE CREATION AND ADJUDICATION OF HEALTH CARE INSURANCE PLANS

and invented by:

Wayne A. Provost, Vaughn C. Cecil, John W. Kwant, Jr. and Brian E. PetersonIf a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:☒ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: 09/204,886

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having Forty-two (42) pages and including the following:
 - a. ☒ Descriptive Title of the Invention
 - b. ☒ Cross References to Related Applications *(if applicable)*
 - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
 - d. ☐ Reference to Microfiche Appendix *(if applicable)*
 - e. ☒ Background of the Invention
 - f. ☒ Brief Summary of the Invention
 - g. ☒ Brief Description of the Drawings *(if drawings filed)*
 - h. ☒ Detailed Description
 - i. ☒ Claim(s) as Classified Below
 - j. ☒ Abstract of the Disclosure

JC526 U.S. PTO
09/24097

11/28/00

UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

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Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal b. ☐ Informal Number of Sheets Four (4)
4. ☒ Oath or Declaration
- a. ☐ Newly executed (original or copy) ☐ Unexecuted
- b. ☒ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application,
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under
Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby
incorporated by reference therein.
6. ☐ Computer Program in Microfiche
7. ☐ Genetic Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☐ Assignment Papers (cover sheet & documents)
9. ☐ 37 CFR 3.73(b) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449 ☐ Copies of IDS Citations
12. ☒ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
- ☐ First Class ☒ Express Mail (Specify Label No.): EL661548809US

UTILITY PATENT APPLICATION TRANSMITTAL
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Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☒ Small Entity Statement(s) - Specify Number of Statements Submitted: copy of one (1)
17. ☒ Additional Enclosures *(please identify below):*

PTO - Charge Form 2038 charging the amount of \$570.00 for application filing fee.

Copy of Assignment and Recordation Cover Sheet from parent application.

Request That Application Not Be Published Pursuant To 35 U.S.C. 122(b)(2)

18. ☐ Pursuant to 35 U.S.C. 122(b)(2), Applicant hereby requests that this patent application not be published pursuant to 35 U.S.C. 122(b)(1). Applicant hereby certifies that the invention disclosed in this application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing of the application.

Warning

An applicant who makes a request not to publish, but who subsequently files in a foreign country or under a multilateral international agreement specified in 35 U.S.C. 122(b)(2)(B)(i), must notify the Director of such filing not later than 45 days after the date of the filing of such foreign or international application. A failure of the applicant to provide such notice within the prescribed period shall result in the application being regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the notice was unintentional.

UTILITY PATENT APPLICATION TRANSMITTAL
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Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	35	- 20 =	15	x \$9.00	\$135.00
Indep. Claims	5	- 3 =	2	x \$40.00	\$80.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$355.00
OTHER FEE (specify purpose) _____					\$0.00
TOTAL FILING FEE					\$570.00

- ☒ A check in the amount of \$570.00 to cover the filing fee is enclosed. (SEE FORM PTO-2085)
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. 23-3178 as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of _____ as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: November 28, 2000

R. Burns Israel
Signature

R. Burns Israel
Attorney for Applicant
Registration No. 42,685



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CC:

PATENT TRADEMARK OFFICE

Express Mailing Label No. EL661548809US

PATENT APPLICATION

Docket No.:14689.3.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of)
)
	Wayne A. Provost et al.)
)
Serial No.:	Not Yet Assigned) Art Unit
) Not Yet
) Assigned
Filed:	November 28, 2000)
)
For:	INTERACTIVE CREATION AND)
	ADJUDICATION OF HEALTH CARE)
	INSURANCE CLAIMS)
)
Examiner:	Not Yet Assigned)

PRELIMINARY REMARKS

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Applicants respectfully request consideration of the pending claims in view of the remarks made herein. Claims 1-35, including independent claims 1, 13, 18, 24 and 28, filed concurrently with this preliminary amendment, are now pending.

REMARKS

Certain claims of the parent application, U.S. Patent Application Serial No. 09/204,886, were rejected under § 102 (b) or § 103 (a), based on U.S. Patent No. 5,359,509 to Little et al., or Little in view of U.S. Patent No. 6,012,035 to Freeman, Jr. et al. While the claims now pending in this application are not necessarily coextensive in scope with the claims that were rejected in the

parent application, Applicants provide the following remarks to assist the Examiner in considering the pending claims.

Applicants respectfully submit that the pending claims, 1-35, distinguish from the prior art cited in the parent application. The final Office Action in the parent application at page 3, paragraph 6, took official notice that “it is old and well-known in the insurance art to pre-approve treatment for a patient.” Applicants note that claim 1 of the present application recites the following acts, both of which are performed prior to the health care provider performing health care services:

transmitting a proposed insurance claim that includes the diagnosis code and the treatment code from the client computer to the remote server computer prior to the health care provider performing health care services;

determining, by the remote server computer, whether the proposed insurance claim is in condition to be paid, including performing the act of determining, by the remote server computer, whether the diagnosis code and the treatment code correspond to health care services that are approved for payment.

In view of the foregoing elements of claim 1, Applicants do not merely claim “pre-approving treatment for a patient.” Instead, claim 1 recites a method by which a remote server computer determines whether a proposed insurance claim is in condition to be paid prior to the health care provider performing health care services. Without conceding that it was known in the insurance art to “pre-approve treatment for a patient,” Applicants respectfully submit that any such pre-approval would have been limited to a labor-intensive process of a health care provider personally calling a representative of an insurance company by telephone to determine whether the patient’s insurance plan covers the patient for certain treatments. For example, in the prior art of

which official notice was made, a surgeon would be required to call an insurance company representative by telephone to determine whether a patient is covered for, say, orthopedic surgery.

If the official notice of “pre-approval of treatment” is intended to be interpreted that it was well known in the insurance art to transmit and analyze proposed insurance claims prior to the health care provider performing health care services, the Applicants traverse this official notice. Applicants submit that there was no knowledge in the insurance art of transmitting and analyzing proposed insurance claims prior to health care services being performed, and no specific and pertinent reference was produced during prosecution of the parent application.

Applicants point out that the method of “pre-approval of treatment” of which official notice was made has several disadvantages, which are overcome by the present invention. For instance, even if the surgeon were to learn that a patient was covered for orthopedic surgery, such “pre-approval of treatment” would not ensure that an insurance claim prepared by the surgeon would be in condition to be paid. Pre-approval as cited by the official notice would do no more than give the surgeon some assurance that payment will eventually be made, but only upon the creation of a formal, acceptable insurance claim after the health care services are performed. “Pre-approval of treatment” as cited in the official notice does not involve an analysis of a proposed insurance claim as recited in claim 1. More specifically, the “pre-approval of treatment” of which official notice was made does not involve “determining, by the remote server computer, whether the proposed insurance claim is in condition to be paid”, as recited in claim 1.

The specification of the present application, at page 5, lines 2-13, describes some of the problems associated with preparing insurance claims as experienced in the prior art. Applicants note that the following problems described in the specification of the present application are applicable even in situations in which the “pre-approval of treatment” of the official notice is

obtained and that these problems are overcome in accordance with the invention claimed in claim 1:

The [insurance] claims can be rejected for any of a large number of informalities, including clerical errors, . . . indicia of fraud, etc. The health care provider is not made aware of the deficiencies of the submitted claims until a later date -- potentially weeks afterwards -- when the disposition of the insurance claim is communicated to the health care provider. As a result, many claims are subject to multiple submission and adjudication cycles, as they are successively created, rejected, and amended. Each cycle may take several weeks or more, and the resulting duplication of effort decreases the efficiency of the health care system. Studies have shown that some insurance claim submission systems reject up to 70% of claims on their first submission for including inaccurate or incorrect information or for other reasons. Many of the claims are eventually paid, but only after they have been revised in response to an initial rejection.

The clerical errors described above can, and frequently do, happen, regardless of whether the “pre-approval of treatment” of the official notice is obtained.

In contrast, the invention recited in claim 1 includes the act of “transmitting a proposed insurance claim . . . prior to the health care provider performing health care services.” In this manner, the proposed insurance claim can be analyzed to make a determination, prior to the health care services being performed, as to whether the proposed insurance claim is in condition to be paid. Any clerical errors or the like, such as those that could exist regardless of whether “pre-approval of treatment” has been made, can be identified and corrected prior to the health care services being provided. In this manner the health care provider avoids being made aware of the deficiencies of the insurance claim at a later date, which would be potentially weeks afterwards.

This claimed method is not merely “pre-approval of treatment” of which official notice has been made in the parent application. As described below, Little also fails to disclose “transmitting a proposed insurance claim . . . prior to the health care provider performing health care services.” For at least this reason, claim 1 of the present application distinguishes from the references cited in the final Office Action of the parent application.

The insurance claims of Little are submitted only after health care services are provided, regardless of whether the health care provider receives “pre-approval of treatment for a patient” as cited in the official notice. Little is generally directed to “a system for adjudicating health care payment requests” for “procedures and services [already] provided.” (See Little, col. 5, lines 18-19; and col. 6, line 17-18). In contrast, the invention of claim 1 relates to interactively preparing a proposed insurance claim prior to performing health care services, and for informing a health care provider, prior to performing the health care services, whether the proposed insurance claim is in condition to be paid. Again, as noted above, the officially noted “pre-approval of treatment” also does not cause a health care provider to be informed, prior to health care services being performed, as to whether a proposed insurance claim is in condition to be paid.

As an initial matter, the method of Little is entirely consistent with the “pre-approval of treatment for a patient” of which official notice has been made in the parent application, in which a health care provider engages in a labor-intensive process of personally calling a representative of an insurance company by telephone to determine whether the patient’s insurance plan covers the patient for certain treatments. In the example presented above, in the prior art of which official notice was made, a surgeon would be required to call an insurance company representative by telephone to determine whether a patient is covered for, say, orthopedic surgery. Assuming that one of skill in the art were motivated to combine this “pre-approval of treatment” with the claim

adjudication process of Little, this combination of references nonetheless fails to teach or suggest all of the limitations of claim 1. For instance, this combination fails to teach or suggest the act of:

transmitting a proposed insurance claim that includes the diagnosis code and the treatment code from the client computer to the remote server computer prior to the health care provider performing health care services.

Combining the act of “pre-approval of treatment” with the method of Little merely results in a health care provider having the general knowledge that, if a formal and acceptable insurance claim were to be prepared after the health care services are provided, the insurance claim would be paid. This combination of references in no way eliminates the clerical errors or the like that can, and frequently do, result in attempted insurance claims prepared after the health care services are performed being rejected.

Turning now to the details of the method of Little, payment requests can be transmitted as electronic data through a network. (Col. 6, lines 53-56; Fig. 1, element 215). However, Little does not disclose transmitting insurance claims, diagnosis codes, treatment codes, or payment requests prior to a health care provider performing health care services. Instead, Little discloses a system for adjudicating health care payment requests using a computerized expert system (col. 5, lines 18-33) that was intended to replace or supplement conventional manual adjudication systems (col. 1, lines 43-63). Both conventional manual adjudication systems and the expert system of Little adjudicate payment requests under a payment model whereby health care providers create payment requests after health care services have been performed.

Little addresses the timing of the creation of the payment request only obliquely, since it was understood by those skilled in the art to which Little is directed that insurance claims could not

be created and adjudicated prior the health care provider performing health care services. For example, Little discloses that the “payment request . . . includes . . . a listing of procedures and supplied *provided* to the patient” (col. 6, lines 12-16; emphasis added) and that “[t]he process begins with the health care provider . . . submitting a request . . . for services and materials *provided* to a patient” (col. 6, lines 29-32; emphasis added). Both passages suggest health care services performed in the past, rather than after the creation of the payment request. In this manner Little teaches away from independent claim 1. Little addresses the timing of the creation of the payment request only in passing, since there was no understanding on part of Little of the concept of interactively preparing an insurance claim.

In contrast, the timing of transmitting the proposed insurance claim prior to the health care provider performing health care services as recited in claim 1 results in significant benefits that are not understood by Little nor in the “pre-approval of treatment” of which official notice was made. Transmitting the insurance claim in the manner recited in claim 1 enables the insurance claim to be interactively prepared, something that was not possible prior to the invention of claim 1.

Claim 1 also recites

transmitting information from the remote server computer to the client computer prior to the health care provider performing the health care services, the information indicating to the health care provider whether the proposed insurance claim is in condition to be paid.

Little fails to disclose transmitting information of any kind from a remote server computer to a client computer associated with a health care provider. The only communication between computers in Little is represented by the payment requests, which can be transmitted as electronic data through a network as noted previously. However, the payment requests of Little flow in the

direction opposite that recited in the foregoing step of claim 1. In other words, the electronic communication between computers of Little is one-way. Irrespective of whether two-way communication is possible, no information is transmitted from the computers associated with the expert system to a computer associated with the health care provider. Based on the context of Little, this is to be expected; Little does not disclose interactive preparation of insurance claims, but rather simply discloses the transmission of payment requests from a health care provider to the adjudication system.

In addition to failing to disclose any kind of information being transmitted from a remote server computer to a client computer associated with a health care provider, Little also does not transmit information in any manner to a health care provider regarding whether the payment request will be honored prior to the health care provider performing health care services. Any indication given to the health care provider regarding the status of the payment request in Little clearly occurs after the health care services have been performed. For instance, Little states that “[o]nce the payer makes its payment decision, the payer writes a check or doesn’t write a check to health care provider and the system ends.” (Col. 6, lines 40-46). In Little, the indication that a payment request is not honored is made by the health care provider failing to receive a check, which represents one of the significant problems experienced by the prior art, including Little, which the invention recited in claim 1 overcomes. Rather than forcing the health care provider to guess at whether a particular insurance claim will be paid, the invention of claim 1 enables the insurance claim to be interactively prepared and allows the health care provider to learn of whether the proposed insurance claim is in condition to be paid prior to the health care provider performing the health care services. The health care provider can then adjust the treatment or correct clerical errors in the insurance claim as necessary to ensure payment for services rendered. This is a vast

improvement over the approach taken by Little, in which the health care provider learns of the non-acceptance of a payment request after the fact by failing to receive a check. (See Little, col. 6, lines 40-46).

For at least the foregoing reasons, Applicants respectfully submit that claim 1 distinguishes from Little and from the official notice of the parent application and request allowance thereof.

Each of the remaining independent claims, namely, claims 13, 18, 24, and 28, include limitations that relate to 1) communication of an insurance claim from a client computer to a server and 2) communication of information from the server to the client computer indicating to the health care provider whether the insurance claim is in condition to be paid, both occurring prior to the health care provider performing health care services. Thus, claims 13, 18, 24, and 28 also distinguish from Little and the official notice of the parent application for at least these reasons.

Each of the remaining claims, 2-12, 14-17, 19-23, 25-27, and 29-35, depends from one of the aforementioned independent claims, 1, 13, 18, 24 and 28, and thus incorporates all of the limitations of the respective independent claim from which it depends. Accordingly, Applicants respectfully submit that dependent claims 2-12, 14-17, 19-23, 25-27, and 29-35, are likewise in condition for allowance, for at least the reasons discussed with regard to independent claims 1, 13, 18, 24, and 28.

Furthermore, many of the dependent claims include limitations that further establish their patentability over Little. For instance, claim 3 includes the element:

transmitting, from the remote server to the client computer, a suggested revised treatment code prior to the health care provider performing the health care services

Claim 34 includes similar limitations. This claimed feature enables the health care provider to include the treatment associated with the revised treatment code in the health care services so that the health care provider will be paid. In sharp contrast to this feature, Little provides no opportunity for interactive preparation of insurance claims, but instead merely “doesn’t write a check” (col. 6, lines 41-42) when an original payment request is not payable. Moreover, Little does not disclose any suggested revised treatment codes, for good reason – when the adjudication system of Little receives an original payment request, the treatment has been performed and any opportunity for revision of the treatment has been lost. Applicants also note that the Examiner in the parent application has indicated that the limitation of claim 3 represents patentable subject matter. For this additional reason, claims 3 and 34 are allowable over Little.

Claim 4 recites, in connection with a previous determination that an original treatment code and a diagnosis code do not correspond to health care services that are approved for payment:

incorporating the revised treatment code into the revised proposed insurance claim; . . .

prior to the health care provider performing the health care services, transmitting, from the remote server to the client computer, information indicating to the health care provider that the diagnosis code and the revised treatment code correspond to health care services that are approved for payment.

Claims 14 and 35 recite similar limitations. With regard to claim 14, a revised proposed insurance claim has “at least one of a revised diagnosis code and a revised treatment code.” These claimed features enable the health care provider to select a new treatment code or diagnosis code, to correct clerical errors or otherwise, that will result in the insurance claim being approved for payment prior to the health care services being performed. In contrast, Little provides no

opportunity for interactive preparation of insurance claims, but instead merely “doesn’t write a check” (col. 6, lines 41-42) when an original payment request is not payable. Moreover, since the adjudication system of Little receives an original payment request only after the treatment has been performed, there is no disclosure or possibility of a “revised” treatment code. For this additional reason, claims 4, 14, and 35 are allowable over Little.

Claim 25 includes recites “prompting the health care provider to revise at least one of the diagnosis code and the treatment code prior to the health care provider performing the health care services”. Claim 25 is therefore allowable over Little for the additional reasons presented above in reference to claims 3 and 4.

For at least the foregoing reasons, Applicants respectfully submit that pending claims 1-35 are in condition for allowance and courteously request favorable action.

Dated this 28th day of November, 2000.

Respectfully submitted,



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UNITED STATES PATENT APPLICATION

of

Wayne A. Provost

Vaughn C. Cecil

John W. Kwant, Jr.

and

Brian E. Peterson

for

**INTERACTIVE CREATION AND ADJUDICATION
OF HEALTH CARE INSURANCE CLAIMS**

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BACKGROUND OF THE INVENTION

1. Related Applications

This application is a continuation of U.S. Patent Application Serial No. 09/204,886, filed December 3, 1998, entitled "Provider Claim Editing and Settlement System," which is incorporated herein by reference.

2. The Field of the Invention

The present invention relates to systems for creating and approving health insurance claims. More particularly, the present invention relates to interactively creating insurance claims on a client computer that communicates with a remote server computer, whereby a health care provider can be almost immediately informed whether the created insurance claim is in condition to be paid.

3. Relevant Technology

The cost of health care continues to increase as the health care industry becomes more complex, specialized, and sophisticated. The proportion of the gross domestic product that is accounted for by health care is expected to gradually increase over the coming years as the population ages and new medical procedures become available. Over the years, the delivery of health care services has shifted from individual physicians to large managed health maintenance organizations. This shift reflects the growing number of medical, dental, and pharmaceutical specialists in a complex variety of health care options and programs. This complexity and specialization has created large administrative systems that coordinate the delivery of health care between health care providers, administrators, patients, payors,

1 and insurers. The cost of supporting these administrative systems has increased during
2 recent years, thereby contributing to today's costly health care system.

3 A significant portion of administrative costs is represented by the systems for
4 creating, reviewing and adjudicating health care provider payment requests. Such payment
5 requests typically include bills for procedures performed and supplies given to patients.
6 Careful review of payment requests minimizes fraud and unintentional errors and provides
7 consistency of payment for the same treatment. However, systems for reviewing and
8 adjudicating payment requests also represent transaction costs which directly reduce the
9 efficiency of the health care system. Reducing the magnitude of transaction costs involved
10 in reviewing and adjudicating payment requests would have the effect of reducing the rate of
11 increase of health care costs. Moreover, streamlining payment request review and
12 adjudication would also desirably increase the portion of the health care dollar that is spent
13 on treatment rather than administration.

14 Several factors contribute to the traditionally high cost of health care administration,
15 including the review and adjudication of payment requests. First, the volume of payment
16 requests is very high. Large health management organizations may review tens of thousands
17 of payment requests each day and tens of millions of requests yearly. In addition, the
18 contractual obligations between parties are complex and may change frequently. Often,
19 there are many different contractual arrangements between different patients, insurers, and
20 health care providers. The amount of authorized payment may vary by the service or
21 procedure, by the particular contractual arrangement with each health care provider, by the
22 contractual arrangements between the insurer and the patient regarding the allocation of
23 payment for treatment, and by what is considered consistent with current medical practice.

1 During recent years, the process of creating, reviewing, and adjudicating payment
2 requests from health care providers has become increasingly automated. For example, there
3 exist claims processing systems whereby technicians at health care providers' offices
4 electronically create and submit medical insurance claims to a central processing system.
5 The technicians include information identifying the physician, patient, medical service,
6 insurer, and other data with the medical insurance claim. The central processing system
7 verifies that the physician, patient, and insurer are participants in the claims processing
8 systems. If so, the central processing system converts the medical insurance claim into the
9 appropriate format of the specified insurer, and the claim is then forwarded to the insurer.
10 Upon adjudication and approval of the insurance claims, the insurer initiates a check to the
11 provider. In effect, such systems bypass the use of the mail for delivery of insurance claims.

12 In partially automated systems, such as that described in the foregoing example, the
13 technician can submit a claim via electronic mail on the Internet or by other electronic
14 means. To do so, the technician establishes communication with an Internet service
15 provider or another wide area network. While communication is maintained, the technician
16 sends the insurance claim to a recipient and then either discontinues communication or
17 performs other activities while communication is established. Using such conventional
18 systems, personnel at the health care provider's office are unable to determine whether the
19 submitted claim is in condition for payment and do not receive any indication, while
20 communication is maintained, whether the claim will be paid.

21 Thus, while systems that permit electronic submission of insurance claims
22 marginally decrease the time needed to receive payment by eliminating one or more days
23 otherwise required to deliver claims by mail, they remain subject to many of the problems
24 associated with other claims submission systems. For example, it has been found that a

1 large number of insurance claims are submitted with information that is incomplete,
2 incorrect, or that describes diagnoses and treatments that are not eligible for payment. The
3 claims can be rejected for any of a large number of informalities, including clerical errors,
4 patient ineligibility, indicia of fraud, etc. The health care provider is not made aware of the
5 deficiencies of the submitted claims until a later date -- potentially weeks afterwards -- when
6 the disposition of the insurance claim is communicated to the health care provider. As a
7 result, many claims are subject to multiple submission and adjudication cycles, as they are
8 successively created, rejected, and amended. Each cycle may take several weeks or more,
9 and the resulting duplication of effort decreases the efficiency of the health care system.
10 Studies have shown that some insurance claim submission systems reject up to 70% of
11 claims on their first submission for including inaccurate or incorrect information or for other
12 reasons. Many of the claims are eventually paid, but only after they have been revised in
13 response to an initial rejection.

14 In order to attempt to minimize the number of claims that are rejected, physicians or
15 their staff have had to spend inordinate amounts of time investigating which treatments will
16 be covered by various insurers and insurance plans. The time spent in such activities
17 represents further efficiency losses in the health care system.

18 Depending on a patient's insurance plan and the diagnosis and treatment rendered,
19 the patient may be required to make a co-payment representing, for example, a certain
20 percentage of the medical bill or a fixed dollar amount. Because of the large number of
21 insurers and insurance plans, the amount of the co-payment can vary from patient to patient
22 and from visit to visit. Moreover, when a patient is not covered for certain treatment, the
23 patient may be liable for the entire amount of the health care services. It is sometimes
24 difficult for technicians at the offices of the health care provider to determine that amount of

1 any co-payment or any other amount due from the patient while the patient remains at the
2 offices after a medical visit. Once the patient leaves the office, the expense of collecting
3 amounts owed by patients increases and the likelihood of being paid decreases.
4 Conventional insurance claim submission systems have not been capable of efficiently and
5 immediately informing technicians at the offices of a health care provider of amounts owed
6 by patients, particularly when the amount is not a fixed dollar amount.

7 In view of the foregoing, there is a need in the art for more fully automated claims
8 processing systems. For example, it would be an advancement in the art to reduce the
9 uncertainty as to whether a claim to be submitted is likely to be paid or rejected.
10 Furthermore, it would be advantageous to provide a claims processing system that would
11 more easily allow health care providers to know what patient and treatment information
12 must accompany insurance claims. There also exists a need for systems that allow health
13 care providers to easily learn of the status of submitted insurance claims.

SUMMARY AND OBJECTS OF THE INVENTION

The present invention relates to methods and systems for interactively creating insurance claims. According to the invention, a medical technician can prepare an insurance claim electronically, submit the claim via the Internet or another wide area network, and receive almost immediately an indication whether the submitted claim is in condition to be paid. If the medical technician is informed that the claim is not in condition to be paid, the claim can be amended by correcting errors or otherwise placing the claim in condition to be paid. By using the invention, health care providers can essentially eliminate the possibility of having claims rejected after a lengthy adjudication process. The invention can significantly reduce the time, effort, and expense that have been associated with the submission of claims that are not in condition to be paid.

According to the invention, communication is established between a client computer operated by a medical technician and a remote server computer. The communication can be established using the Internet, a direct-dial telephone line, or any other suitable wide area network infrastructure. The client computer displays a computer-displayable claim form to the medical technician. The claim form can be sent to the client computer by the remote server or can instead be retrieved from a local memory device. The claim form includes fields that permit the medical technician to enter patient identification information that identifies the patient. The patient identification information is transmitted from the client computer to the remote server. The remote server then determines whether the patient is a beneficiary of a health insurance plan and informs the client computer of the patient eligibility status.

Informing the medical technician almost immediately of the patient's insurance status allows the health care provider to select the appropriate treatment for the patient. The

1 patient's eligibility status transmitted from the remote server can include any desired amount
2 of detail. For example, the eligibility status can describe the types of diagnoses and
3 treatments for which payment will be made on behalf of the patient, and the co-payment
4 required by the patient.

5 If the patient is a beneficiary of an approved insurance plan, the medical technician
6 can proceed with preparation of a full insurance claim. The claim form displayed by the
7 client computer includes fields that permit the medical technician to enter one or more
8 diagnosis codes describing the diagnosis of the patient and one or more treatment codes
9 describing the treatment administered to the patient. The claim form can also include fields
10 representing the identity of the health care provider and any other desired information.

11 The diagnosis and treatment codes are transmitted from the client computer to the
12 remote server. The remote server or a processor associated therewith then processes the
13 transmitted information to determine whether the insurance claim is in condition to be paid.
14 For example, the remote server can verify that all required information is included. The
15 remote server can also determine whether the diagnosis code and the treatment code
16 correspond to currently accepted medical practice and to health care services that are
17 covered by the particular insurance plan of the patient. The remote server can also perform
18 any desired checks on the information in the insurance claim to determine whether the claim
19 has indicia of fraud, unusually expensive treatment, or any other feature that indicates that
20 the validity or accuracy of the claim should be further investigated.

21 If the insurance claim is not in condition to be paid, the remote server transmits
22 information to the client computer to inform the medical technician. The information
23 transmitted to the client computer can include an indication of the reason for rejection of the
24 claim and, optionally, suggestions on how to remedy the problem. For instance, if the

1 insurance claim does not include complete information, the medical technician can be
2 prompted to complete the claim form. The deficiency of the claim can be substantive, as
3 well, in that the treatment code could represent a treatment that is not considered to be
4 compatible with the diagnosis. In this case, the health care provider can change the
5 treatment, otherwise amend the claim form, or inform the patient that the insurance plan will
6 not cover the treatment. When a claim form has been amended, the new information can be
7 transmitted to the remote server to repeat the process of determining whether the claim is in
8 condition to be paid.

9 When the remote server determines that the claim is in condition to be paid, the
10 remote server transmits information to the client computer to notify the medical technician.
11 The information transmitted to the client computer can include data that represents an
12 amount that is to be paid by the insurer on behalf of the patient. The medical technician can
13 also be informed of any co-payment to be collected from the patient. Because the process of
14 determining whether the claim is in condition for payment can occur almost instantaneously
15 – typically in a matter of seconds or minutes – any co-payment can be collected from the
16 patient while the patient remains in the offices of the health care provider before or after
17 treatment.

18 In view of the foregoing, the invention provides systems and methods for providing
19 almost immediate feedback to the medical technician specifying whether a submitted claim
20 is in condition to be paid. While the speed of response can vary, depending on the data
21 transmission rates between the client computer and the remote server, the processing
22 capabilities of the remote server, and the complexity of the verification process to be
23 conducted by the remote server, the invention can provide almost immediate response to
24 submitted claims. The response time can be short enough that the medical technician can

1 create a claim, submit the claim, and be notified whether the claim is in condition for
2 allowance without discontinuing communication between the client computer and the
3 remote server, while continuing to view the claim form displayed by the client computer, or
4 without proceeding to another patient's claim before receiving the response. In any event,
5 the response time is significantly faster than that of conventional systems, which do not
6 permit the interactive creation and modification of insurance claims.

7 The invention can significantly reduce the inefficiencies that are otherwise
8 experienced in the health care system as claims are submitted, subjected to an adjudication
9 process, and often rejected days, weeks, or longer, after the claim was created. The claim
10 creation and verification systems of the invention also allow health care providers to easily
11 learn of the types of treatments that are approved for payment for specific diagnoses
12 according to the patient's insurance plan. In addition, the invention increases the efficiency
13 of collecting co-payments from patients and increases the likelihood that such co-payments
14 will be made.

15 Additional objects and advantages of the invention will be set forth in the description
16 which follows, and in part will be obvious from the description, or may be learned by the
17 practice of the invention. The objects and advantages of the invention may be realized and
18 obtained by means of the instruments and combinations particularly pointed out in the
19 appended claims. These and other objects and features of the present invention will become
20 more fully apparent from the following description and appended claims, or may be learned
21 by the practice of the invention as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 is schematic diagram illustrating an interactive system according to the invention, including a client system at the offices of a health care provider and a remote server system, whereby a medical technician can interactively prepare an insurance claim that is in condition to be paid.

Figure 2 illustrates an insurance claim form that enables a medical technician to determine whether and to what extent a patient is a beneficiary of an approved insurance plan.

Figure 3 illustrates an insurance claim form that enables a medical technician to submit an insurance claim including one or more diagnosis codes and one or more treatment codes.

Figure 4a is a flow diagram illustrating one embodiment of the methods of the invention for determining whether and to what extent a patient is a beneficiary of an approved insurance plan.

Figure 4b is a flow diagram depicting one embodiment of the methods for interactively preparing an insurance claim that is in condition to be paid.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to methods and systems for interactively preparing and submitting insurance claims and verifying that the claims are in condition to be paid. A medical technician at the offices of a health care provider operates a client computer that communicates with a remote server. According to one embodiment of the invention, the medical technician views a computer-displayable claim form displayed by the client computer and enters a diagnosis code and a treatment code that describe a medical diagnosis and associated treatment for a patient. The diagnosis code and the treatment code are transmitted to the remote server. The remote server performs an operation in response to the diagnosis code and the treatment code to determine if these codes correspond to health care services that are approved for payment.

If the remote server determines that the submitted claim will not be paid by an insurer, the remote server transmits information to the client computer to inform the medical technician of this result. In response, the medical technician can amend the treatment code or any other desired information on the insurance claim to place the claim in condition to be paid. After amending the claim, the claim is again submitted to the remote server, where it is again analyzed to determine whether it represents health care services that are approved for payment.

According to one embodiment, when the remote server determines that the submitted claim is in condition to be paid, the remote server transmits information to the client computer indicating the amount that is to be paid by the insurer on behalf of the patient. The system can also inform the medical technician of any co-payment to be collected from the patient.

1 Embodiments of the invention include or are incorporated in computer-readable
2 media having computer-executable instructions or data structures stored thereon. Examples
3 of computer-readable media include RAM, ROM, EEPROM, CD-ROM or other optical disk
4 storage, magnetic disk storage or other magnetic storage devices, or any other medium
5 capable of storing instructions or data structures and capable of being accessed by a general
6 purpose or special purpose computer. Computer-readable media also encompasses
7 combinations of the foregoing structures. Computer-executable instructions comprise, for
8 example, instructions and data that cause a general purpose computer, special purpose
9 computer, or special purpose processing device to execute a certain function or group of
10 functions. The computer-executable instructions and associated data structures represent an
11 example of program code means for executing the steps of the invention disclosed herein.

12 The invention further extends to computer systems for interactively creating and
13 submitting insurance claims and determining whether the claims are in condition to be paid.
14 Those skilled in the art will understand that the invention may be practiced in computing
15 environments with many types of computer system configurations, including personal
16 computers, multi-processor systems, network PCs, minicomputers, mainframe computers,
17 and the like. The invention will be described herein in reference to a distributed computing
18 environment, such as the Internet, where tasks are performed by remote processing devices
19 that are linked through a communications network. In the distributed computing
20 environment, computer-executable instructions and program modules for performing the
21 features of the invention may be located in both local and remote memory storage devices.

22 Figure 1 illustrates one embodiment of the systems for interactively creating and
23 submitting insurance claims according to the invention. Client system 10 may be located at
24 the offices of a health care provider in order to allow a medical technician to create and

1 submit insurance claims. As used herein, the term "health care provider" is to be broadly
2 construed to include any physician, dentist, medical practitioner, or any other person whose
3 services can be compensated by a health insurer, a health maintenance organization, or the
4 like. As used herein, the term "medical technician" represents any person who engages in
5 the activity of preparing or submitting insurance claims on behalf of a health care provider.
6 Since medical technicians are typically employees of health care providers, representatives
7 of health care providers, or may be the health care providers themselves, any of the claims
8 that recite steps, operations, or procedures conducted by "health care providers" are to be
9 construed to extend to the same steps, operations, or procedures conducted by "medical
10 technicians", as well.

11 The term "insurance plan" extends to any contractual or other legal arrangement
12 whereby medical and other related expenses are paid on behalf of a beneficiary. Examples
13 of insurance plans include health maintenance organizations, fee-for-service health care
14 plans, employer-sponsored insurance plans, etc.

15 Client system 10 can be a general purpose computer, such as a PC, or a special
16 purpose computer adapted to perform the functions and operations disclosed herein. Client
17 system 10 may include a display device such as a monitor for displaying claim form 12, as
18 will be disclosed in greater detail below, and one or more input devices such as a keyboard,
19 a mouse, etc. for enabling a medical technician to enter the required information to client
20 system 10.

21 The embodiment illustrated in Figure 1 also includes a server system 14 located
22 typically at a remote location with respect to client system 10. Server system 14 can include
23 a general purpose computer or a special purpose computer adapted to execute the functions
24 and operations of the invention. For example, in Figure 1, server system 14 includes a

1 processor 16, which represents a general purpose computing device for receiving
2 information associated with insurance claims and for determining whether the received
3 information corresponds to health care services that are approved for payment. The
4 operation of server system 14 and processor 16 will be discussed in greater detail below.

5 In one embodiment, processor 16 is capable of accessing information stored in a
6 patient eligibility database 18 and an accepted medical practice database 20. Database 18
7 can include compilation of data that enables server system 14 to determine whether a
8 particular patient identified at client system 10 is a beneficiary of an approved insurance
9 plan. Likewise, database 20 can be any compilation of data that enables service system 14
10 to determine whether the health care services associated with a submitted claim are
11 approved for payment under the particular insurance plan of the patient.

12 While the illustrated components of server system 14 of Figure 1 can be located at a
13 single remote site with respect to client system 10, other embodiments of the invention
14 employ a processor 16 and databases 18 and 20 that may be located at different sites with
15 respect to each other. The terms “server system” and “remote server” extend to the latter
16 case, wherein the various components 16, 18, and 20 are located in a distributed
17 environment unless specifically indicated otherwise.

18 In the embodiment of Figure 1, client system 10 and server system 14 communicate
19 by means of Internet infrastructure 22. While the invention is described herein in the
20 context of the Internet, those skilled in the art will appreciate that other communications
21 systems can be used, such as direct dial communication over public or private telephone
22 lines, a dedicated wide area network, or the like.

23 Referring to Figure 1, when a medical technician desires to prepare an insurance
24 claim for health care services provided to the patient, the medical technician operates client

1 system 10 and establishes communication with server system 14 or verifies that
2 communication has been established. For instance, the medical technician may use client
3 system 10 to dial into a modem pool associated with an Internet service provider in Internet
4 infrastructure 22. After communication with the Internet service provider has been
5 achieved, client system 10 may be used to transmit a Uniform Resource Locator (URL) to
6 the Internet infrastructure 22 that requests access to resources provided by server system 14.
7 Alternatively, any other suitable technique can be used to establish communication between
8 client system 10 and server system 14.

9 In many cases, client system 10 will maintain communication with server system 14
10 for an extended period of time during which claims for multiple patients are processed. For
11 instance, client system 10 can be a dedicated terminal that maintains communication with
12 server system 14 in order for numerous insurance claims to be created and processed.

13 Once communication has been established, the medical technician can use client
14 system 10 to request claim form 12 to be displayed on a monitor associated with client
15 system 10. Claim form 12, in one embodiment, is a Hyper Text Markup Language (HTML)
16 document retrieved from server system 14 and displayed to the medical technician.
17 Alternatively, claim form 12 can have any other suitable format or can be stored at a local
18 cache or any other local data storage system, thereby eliminating the need to repeatedly
19 retrieve claim form 12 from a remote location as multiple insurance claims are created.

20 Figure 2 illustrates one example of a claim form 12A that enables a medical
21 technician to verify that a patient is a beneficiary of an insurance plan and to learn of the
22 details of the insurance plan. In this embodiment, claim form 12A includes a field 26 to
23 which a patient identifier can be entered. Patient identification information, such as patient
24 identifier 28 of Figure 1, is entered by the medical technician claim form 12A of Figure 2.

1 Depending on the manner in which the invention is implemented, the medical technician
2 may be required to enter other information, such as other information 30 of Figure 1, that
3 identifies, for example, the insurance plan of the patient, the health care provider, or the like.
4 Turning to Figure 2, claim form 12A in this example includes a field 32 for identifying the
5 insurance plan of the patient, a field 34 for receiving information identifying the health care
6 provider and a field 36 for entering additional information identifying the patient. As shown
7 in Figure 2, field 36 can be adapted to receive a patient's date of birth. Alternatively, any
8 other information that can uniquely identify a particular patient from among a pool of
9 patients can be used in combination with fields 26 and 36. By way of example and not
10 limitation, the patient identification information entered to fields 26 or 36 can include
11 patient's social security number, or a number uniquely associated with the patient by an
12 insurance plan or a health maintenance organization.

13 Referring now to Figure 1, after the medical technician has entered patient identifier
14 28 and, optionally, other information 30, the medical technician uses client system 10 to
15 transmit the information to server system 14. In one embodiment, processor 16 compares
16 patient identifier 28 against data stored in patient eligibility database 18 to determine if the
17 patient is a beneficiary of an insurance plan and, if so, the details of the benefit thereof. If
18 the patient is found not to be a beneficiary of an approved insurance plan, information is
19 transmitted from server system 14 to client system 10 to inform the medical technician of
20 this result. Thus, when the patient is not a beneficiary, a medical technician and the health
21 care provider can promptly learn of this status and take steps to advise the patient or provide
22 appropriate medical treatment.

23 If it is determined that the patient is a beneficiary, information is likewise transmitted
24 from server system 14 to client system 10 informing the medical technician of the patient's

1 status. The information can also provide details of the coverage provided to the patient that
2 can allow the health care provider to select the appropriate course of action for the patient.
3 The details can include the types of diagnoses and treatments that are approved for payment.

4 When the health care provider makes a diagnosis and performs or prescribes
5 treatment to the patient, the medical technician can complete the claim form by entering at
6 least one diagnosis code 38 and one treatment code 40. Referring now to Figure 3, claim
7 form 12B includes fields adapted to accept the diagnosis code and the treatment code.
8 Claim form 12B of Figure 3 and claims form 12A may be separate forms displayed to the
9 medical technician using client system 10 or can be separate portions of the single claim
10 form. Claim form 12B, in the example of Figure 3, includes header information 42 that has
11 been automatically prepared by the server system before claim form 12B was transmitted to
12 the client system. Providing a claim form 12B that is automatically partially completed
13 contributes to the efficiency of the claims creation and submission processes of the
14 invention. While claim form 12B represents a claim form that can be advantageously used
15 by many health care providers, the specific fields included in the form and the information
16 displayed on the form may vary from one implementation to another, depending on the type
17 of health care provider, insurance plan, and other factors.

18 Claim form 12B includes a plurality of fields 44 designed to receive and display
19 diagnosis codes representing the health care provider's diagnosis of the patient or the nature
20 of the patient's illness or injury. Thus, as used herein, "diagnosis code" refers to any
21 information that specifies or indicates a patient's condition as diagnosed by a health care
22 provider. Any predefined set of diagnosis codes can be used with the invention.

23 Claim form 12B also includes one or more fields 46 designed to receive and display
24 treatment codes associated with the diagnosis code of field 44. As used herein, "treatment

1 codes” can represent any type of health care services such as clinical therapy,
2 pharmacological therapy, therapeutic supplies or devices, or other goods or services that can
3 be paid for by health insurance plans or health maintenance organizations. The treatment
4 codes can be selected from any desired set of predefined treatment codes that define various
5 treatments that can be administered to patients. In one embodiment, the diagnosis codes and
6 the treatment codes can be selected from the codes and code modifiers of a volume entitled
7 Physician's Current Procedural Terminology (CPT), which is maintained and updated
8 annually by the American Medical Association.

9 As shown in Figure 3, claims form 12B can include other fields, such as fields 48,
10 that are to be completed by the medical technician before the insurance claim is submitted.
11 In this example, fields 48 are adapted to receive and display information identifying the
12 patient, a referring physician, and the health care provider who is to receive payment for the
13 health care services provided to the patient.

14 When fields 44, 46, and 48 are filled out by the medical technician, the medical
15 technician submits the information included in these fields to server system 14 from client
16 system 10. Referring again to Figure 1, server system 14 receives this information and
17 performs certain operations in response thereto to determine whether the claim form
18 corresponds to health care services that are approved for payment by the patient's insurance
19 plan. For instance, processor 16 can compare the diagnosis code 38 and treatment code 40
20 with a compilation of currently accepted medical procedures stored in database 20. In one
21 embodiment, MDR may be used to determine whether the diagnosis codes and treatment
22 codes correspond to health care services that are approved for payment. Upon learning of
23 the invention disclosed herein, those skilled in the art will understand how MDR can be used
24

1 to determine whether the submitted claim form represents health care services that are
2 approved for payment.

3 Server system 10 also determines whether the information provided in claim form
4 12B is sufficiently complete to place insurance claim in condition to be paid. For example,
5 if the medical technician inadvertently fails to include information that identifies the
6 referring physician, server system can detect this error and later notify client system 10 of
7 the deficiency.

8 The techniques for processing submitted insurance claims at server system 14 can be
9 as complex as desired. In one embodiment, server system 14 analyzes the information
10 submitted using claim form 12B to determine whether there are indicia of fraud or mistake,
11 whether unusually expensive health care services are listed in the claim, or whether manual
12 adjudication of the insurance claim is otherwise advisable. If the claim exhibits any of the
13 foregoing features, the claim may be forwarded to a human adjudicator for manual
14 adjudication or may be returned to the health care provider to allow revision of the claim.

15 One technique that is sometimes used by health care providers to collect more money
16 from insurance plans than is otherwise warranted is the practice of unbundling medical
17 procedures. "Unbundling" consists of performing, for example, multiple medical
18 procedures on a patient through a single surgical incision while submitting an insurance
19 claim for the multiple medical procedures as if they had been performed separately.
20 Typically, when only one incision is required to perform multiple medical procedures, the
21 payment to the operating physician is less than the payment would be if each of the multiple
22 medical procedures had been conducted through separate incisions. Other fraudulent
23 unbundling techniques for submitting claims on multiple medical procedures are sometimes
24 used as well. Thus, server system 14 can analyze the diagnosis codes and the treatment

1 codes for indicia of unbundling practices. Furthermore, server system 14 may conduct any
2 other checks on the submitted claim.

3 If server system 14 determines that insurance claims submitted using the claim forms
4 of the invention are not in the condition to be paid for any reason, server system can transmit
5 information to client system 10 informing the medical technician of this result. In addition,
6 the information transmitted to the client system can indicate the basis for rejecting the
7 insurance claim. Thus the medical technician can be informed that the claim form was not
8 completely filled out, the treatment code is inconsistent with the diagnosis code, or any of a
9 number of other possible reasons for rejecting the insurance claim. In response, the medical
10 technician can amend the insurance claim by entering the correct information to the fields of
11 claim form 12B of Figure 3, if necessary. In other cases, the health care provider can be
12 informed that the recommended treatment defined by treatment code 40 of Figure 1 is not
13 approved for payment by the patient's insurance plan. The health care provider can then
14 advise the patient and decide to proceed with the treatment or to prescribe an alternative
15 treatment that is approved for payment.

16 If the medical technician wishes to amend the insurance claim, the new information
17 is transmitted from client system 10 to server system 14 for processing. For example, the
18 health care provider may decide that an alternative treatment is appropriate for the patient, in
19 which case the medical technician would enter a new treatment code to client system 10.
20 Server system 14 then repeats the previously described process of determining whether the
21 amended insurance claim is in condition for payment. The above-described process can be
22 repeated as many times as desired or necessary to create and submit an insurance claim that
23 describes health care services that are approved for payment by the patient's insurance plan.
24

almost immediately by the medical technician. It can be understood that the limiting factors with respect to the speed of response include the data transmission rate supported by Internet infrastructure 22 of Figure 1 and the other communication links between the various components of the system, the processing capabilities of processor 16 and other components of server system 14, and the complexity of the submitted claim and the nature of the claim processing techniques performed by server system 14.

In many cases, the response time is short enough that a medical technician can conveniently continue viewing the claim form associated with a particular patient at client system 10 of Figure 1 while server system 14 performs the operations that determine whether the submitted claim is in condition to be paid. Thus, a medical technician can consecutively create and submit a series of claims and receive verification that the claims are in condition for payment. In other words, a medical technician can easily create, submit, and, if necessary, revise and resubmit, a single claim before proceeding to the next claim in a series of claims, since the response time can be very short. This is in sharp contrast to prior art systems in which the response time of days, weeks, or longer make it entirely impractical for medical technicians to complete the entire claim creation and adjudication process for one claim before proceeding to the next claim.

The systems and methods disclosed herein can be practiced in combination with the systems disclosed in co-pending U.S. Patent Application Serial No. 09/118,668, entitled "Internet Claims Processing System", filed July 17, 1998, which is incorporated by reference for purposes of disclosure. For example, the payment systems and payment tracking systems of the foregoing patent application can be employed with the insurance claim creation and submission techniques of the invention. Moreover, as previously described, if claims submitted to server system 14 of Figure 1 exhibit indicia of fraud or

1 mistake, or exceed a threshold dollar amount, the claims can be subjected to additional
2 adjudication procedures. In one embodiment, the additional adjudication procedures can
3 include adjudication techniques described in U.S. Patent Application Serial No. 09/118,668.

4 The invention can be practiced with additional steps for processing or paying
5 insurance claims or for communicating the status of submitted claims to health care
6 providers and patients. For instance, when a claim has been submitted and approved, an
7 explanation of benefits can be automatically created and sent to the provider, the patient,
8 and/or to an employer of the patient. Electronic funds transfer can be used to execute
9 payment from insurers to health care providers for approved claims.

10 Figure 4A illustrates one embodiment of the methods of the invention for
11 interactively determining whether a particular patient is a beneficiary of an approved
12 insurance plan. In step 80, communication is established between the client system and the
13 server system as described herein. In step 82, the client system receives and displays the
14 claim form to enable the medical technician to enter the information required to complete
15 the insurance claim. As previously noted, the client system can retrieve the claim form from
16 the remote server system or from a local data storage device. In step 84, the medical
17 technician enters the patient identification information and transmits the information to the
18 server system.

19 In decision block 86, if the server system discovers that the patient is not a
20 beneficiary of an approved insurance plan, the server system notifies the client of this result
21 as shown in step 88. Likewise, if the server system determines that the patient is a
22 beneficiary, this result is transmitted to the client system as shown in step 90.

23 Figure 4B illustrates one embodiment of the methods of the invention for creating
24 and submitting insurance claims and determining whether the submitted claim is in

1 condition for payment. In step 92, after having been notified that the patient is a beneficiary
2 of an approved insurance plan, the medical technician enters the diagnosis and treatment
3 codes to the claim form and transmits these codes to the server system. As shown in
4 decision block 94, the server system performs any desired claim checking or adjudication
5 process to determine whether the claim describes health care services that are approved for
6 payment. If the claim is not in condition to be paid, the method advances to step 96, in
7 which the client system is notified of this result. As shown by decision block 98, if the
8 medical technician or the health care provider decides to revise the claim, the method again
9 advances to step 92.

10 Referring again to decision block 94, if the server system determines that the claim is
11 in condition for payment, the method advances to step 100, in which the server system
12 determines the amount to be paid by the insurer and any co-payment to be collected from the
13 patient. Next, in step 102, the client system displays the payment amount and the co-
14 payment amount to the medical technician or the health care provider. In step 104, any co-
15 payment can then be collected from the patient. It will also be appreciated that, in other
16 embodiments, the invention can be practiced without calculating the co-payment.

17 The present invention may be embodied in other specific forms without departing
18 from its spirit or essential characteristics. The described embodiments are to be considered
19 in all respects only as illustrative and not restrictive. The scope of the invention is,
20 therefore, indicated by the appended claims rather than by the foregoing description. All
21 changes which come within the meaning and range of equivalency of the claims are to be
22 embraced within their scope.

23 What is claimed and desired to be secured by United States Letters Patent is:
24

1 1. In a system comprising a client computer and a remote server computer
2 connected to the client computer by a communication link, a method of interactively
3 preparing an insurance claim that is in condition to be paid in preparation for a health care
4 provider to perform health care services, the method comprising the acts of:

5 receiving, at the client computer, a diagnosis code and a treatment code
6 entered by a health care provider to a computer-displayable claim form displayed by
7 the client computer;

8 transmitting a proposed insurance claim that includes the diagnosis code and
9 the treatment code from the client computer to the remote server computer prior to
10 the health care provider performing health care services;

11 determining, by the remote server computer, whether the proposed insurance
12 claim is in condition to be paid, including performing the act of determining, by the
13 remote server computer, whether the diagnosis code and the treatment code
14 correspond to health care services that are approved for payment;

15 transmitting information from the remote server computer to the client
16 computer prior to the health care provider performing the health care services, the
17 information indicating to the health care provider whether the proposed insurance
18 claim is in condition to be paid; and

19 if it has been determined that the proposed insurance claim is not in condition
20 to be paid, transmitting a revised proposed insurance claim that includes at least one
21 of a revised diagnosis code and a revised treatment code from the client computer to
22 the remote server computer to determine, prior to the health care provider performing
23 the health care services, whether said revised proposed insurance claim is in
24 condition to be paid.

1
2 2. A method as defined in claim 1, wherein the act of determining whether the
3 proposed insurance claim is in condition to be paid comprises the act of determining that the
4 diagnosis code and the treatment code do not correspond to health care services that are
5 approved for payment.
6

7 3. A method as defined in claim 2, further comprising the act of transmitting,
8 from the remote server to the client computer, a suggested revised treatment code prior to
9 the health care provider performing the health care services, such that the treatment
10 associated with the suggested revised treatment code can be included in the health care
11 services when the health care services are performed by the health care provider.
12

13 4. A method as defined in claim 2, further comprising the acts of:
14 receiving, at the client computer, said revised treatment code entered by the
15 health care provider;

16 incorporating the revised treatment code into the revised proposed insurance
17 claim;

18 determining, by the remote server computer, that the diagnosis code and the
19 revised treatment code correspond to health care services that are approved for
20 payment; and

21 prior to the health care provider performing the health care services,
22 transmitting, from the remote server to the client computer, information indicating to
23 the health care provider that the diagnosis code and the revised treatment code
24 correspond to health care services that are approved for payment.

1
2 5. A method as defined in claim 1, wherein the computer-displayable form is a
3 hypertext markup language document.
4

5 6. A method as defined in claim 1, wherein the act of transmitting the proposed
6 insurance claim and the act of transmitting information are both conducted within a single
7 period of time that is short enough so that the health care provider continues to view the
8 computer-displayable form during the single period of time.
9

10 7. A method as defined in claim 1, wherein the act of transmitting the proposed
11 insurance claim and the act of transmitting information are both conducted within a single
12 period of time that is short enough so that the communication between the remote server
13 computer and the client computer is not discontinued during the single period of time.
14

15 8. A method as defined in claim 1, wherein the diagnosis code and the treatment
16 code are associated with a first patient, the method further comprising the acts of:

17 receiving, at the client computer, a second diagnosis code and a second
18 treatment code entered by a health care provider to the claim form;

19 transmitting a second proposed insurance claim that includes the second
20 diagnosis code and the second treatment code from the client computer to the remote
21 server computer;

22 determining, by the remote server computer, whether the second proposed
23 insurance claim is in condition to be paid, including performing the act of
24 determining, by the remote server computer, whether the second diagnosis code and

1 the second treatment code correspond to health care services that are approved for
2 payment; and

3 transmitting further information from the remote server computer to the client
4 computer prior to the health care provider performing the health care services, the
5 further information indicating to the health care provider whether the second
6 proposed insurance claim is in condition to be paid.

7
8 9. A method as defined in claim 1, wherein the information indicates to the
9 health care provider that the proposed insurance claim is in condition to be paid, such that
10 the diagnosis code and the treatment code correspond to health care services that are
11 approved for payment, the method further comprising the act of transmitting, from the
12 remote server computer to the client computer, data representing an amount to be paid by an
13 insurer to a health care provider who performs the health care services;

14
15 10. A method as defined in claim 9, further comprising the act of displaying, by
16 the client computer, co-payment information representing a co-payment to be collected from
17 a patient who receives the health care services.

18
19 11. A method as defined in claim 10, further comprising the act of collecting the
20 co-payment from the patient based on the co-payment information.

21
22 12. A method as defined in claim 11, wherein the act of collecting the co-
23 payment from the patient is conducted during a visit of the patient to an office of the health
24 care provider, wherein the patient receives said health care services during said visit.

1 13. In a client computer capable of communicating with a remote server
2 computer, a method of interactively preparing an insurance claim that is in condition to be
3 paid in preparation for a health care provider to perform health care services, the method
4 comprising the acts of:

5 generating a computer-displayable claim form for display to a health care
6 provider;

7 receiving a diagnosis code and a treatment code entered to the claim form by
8 the health care provider;

9 transmitting a proposed insurance claim that includes the diagnosis code and
10 the treatment code from the client computer to the remote server computer prior to
11 the health care provider performing health care services associated with the treatment
12 code;

13 prior to the health care provider performing the health care services
14 associated with the treatment code, receiving information from the remote server
15 computer indicating to the health care provider whether the proposed insurance claim
16 is in condition to be paid, the information having been received in response to the
17 remote server computer having performed the act of determining whether the
18 diagnosis code and treatment code correspond to health care services that are
19 approved for payment; and

20 if the information indicates that the proposed insurance claim is not in
21 condition to be paid, transmitting a revised proposed insurance claim that includes at
22 least one of a revised diagnosis code and a revised treatment code to the remote
23 server computer to determine, prior to the health care provider performing the health
24

1 care services, whether said revised proposed insurance claim is in condition to be
2 paid.

3
4 14. A method as defined in claim 13, wherein the information indicates that the
5 proposed insurance claim is not in condition to be paid, such that the diagnosis code and
6 treatment code do not correspond to health care services that are approved for payment, the
7 method further comprising the act of:

8 prior to the health care provider performing the health care services,
9 receiving further information from the remote server computer indicating that the
10 revised proposed insurance claim is in condition to be paid, such that said at least
11 one of the revised diagnosis code and the revised treatment code correspond to health
12 care services that are approved for payment, wherein the treatment associated with
13 the revised proposed insurance claim can be included in the health care services
14 when the health care services are performed by the health care provider.

15
16 15. A method as defined in claim 13, wherein the act of transmitting a proposed
17 insurance claim and the act of transmitting information are both conducted within a single
18 period of time that is short enough so that the communication between the remote server
19 computer and the client computer is not discontinued during the single period of time.

20
21 16. A method as defined in claim 13, further comprising, before the act of
22 receiving the diagnosis code and the treatment code, the act of transmitting patient
23 identification information from the client computer to the remote server computer.

1 17. A method as defined in claim 16, further comprising, after the act of
2 transmitting patient identification information and prior to the health care provider
3 performing the health care services, the act of receiving verification from the remote server
4 computer that a patient identified by the patient identification information is a beneficiary of
5 a health insurance plan.

1 18. In a server system capable of communicating with a client computer, a
2 method of informing a health care provider using the client computer whether an insurance
3 claim is in condition to be paid and represents health care services that are approved for
4 payment prior to the health care provider performing the health care services, comprising the
5 acts of:

6 receiving a proposed insurance claim that includes a treatment code and a
7 diagnosis code from the client computer, the treatment code and diagnosis code
8 having been entered to the client computer by a health care provider prior to the
9 health care provider performing health care services;

10 determining whether the proposed insurance claim is in condition to be paid,
11 including performing the act of determining whether the treatment code and the
12 diagnosis code correspond to health care services that are approved for payment;

13 prior to the health care provider performing the health care services,
14 transmitting information to the client computer indicating to the health care provider
15 whether the proposed insurance claim is in condition to be paid, such that the health
16 care provider can base a decision regarding whether to perform the health care
17 services on whether the health care services are approved for payment; and

18 if it has been determined that the proposed insurance claim is not in condition
19 to be paid, performing the acts of:

20 receiving from the client computer, prior to the health care provider
21 performing the health care services, a revised proposed insurance claim
22 entered by the health care provider, wherein the revised proposed insurance
23 claim includes at least one of a revised diagnosis code and a revised treatment
24 code; and

1 determining whether said revised proposed insurance claim is in
2 condition to be paid.
3

4 19. A method as defined in claim 18, further comprising, prior to the act of
5 receiving the proposed insurance claim, the act of transmitting a computer-displayable claim
6 form to the client computer for display to the health care provider, the claim form including
7 fields for accepting the treatment code and the diagnosis code.
8

9 20. A method as defined in claim 19, wherein the act of transmitting a computer-
10 displayable claim form comprises the act of transmitting a hypertext markup language
11 document from to the client computer via the Internet.
12

13 21. A method as defined in claim 18, wherein the act of receiving the proposed
14 insurance claim and the act of transmitting information are both conducted within a single
15 period of time that is short enough so that communication between the remote server
16 computer and the client computer is not discontinued during the single period of time.
17

18 22. A method as defined in claim 18, wherein the act of determining whether the
19 proposed insurance claim is in condition to be paid comprises the act of comparing the
20 treatment code and the diagnosis code to a database having entries that represent currently
21 accepted medical practice.
22
23
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1 23. A method as defined in claim 18, wherein the act of determining whether the
2 proposed insurance claim is in condition to be paid comprises the act of determining
3 whether a plurality of treatment codes is consistent with an unbundling claiming practice.
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1 24. A computer program product for implementing a method of interactively
2 preparing an insurance claim that is in condition to be paid, the insurance claim being
3 prepared prior to a health care provider performing health care services that are the subject
4 of the insurance claim, wherein the method is capable of being performed on a client
5 computer that communicates with a remote server computer, the computer program product
6 comprising:

7 a computer-readable medium carrying computer-executable instructions for
8 implementing the method, the computer-executable instructions comprising:

9 program code means for displaying a computer-displayable claim
10 form to a health care provider;

11 program code means for initiating transmission of a proposed
12 insurance claim that includes a diagnosis code and a treatment code from the
13 client computer to the remote server computer prior to the health care
14 provider performing the health care services;

15 program code means for receiving, from the remote server computer
16 and prior to the health care provider performing the health care services,
17 information indicating whether the proposed insurance claim is in condition
18 to be paid; and

19 program code means for initiating transmission of a revised proposed
20 insurance claim, prior to the health care provider performing the health care
21 services, if it has been determined that the proposed insurance claim is not in
22 condition for allowance, wherein the revised proposed insurance claim
23 includes at least one of a revised diagnosis code and a revised treatment code.
24

1 28. A computer program product for implementing, in a server system that
2 communicates with a client system, a method of informing a health care provider who uses
3 the client computer whether an insurance claim represents health care services approved for
4 payment prior to the health care provider performing the health care services, the computer
5 program product comprising:

6 a computer-readable medium carrying computer-executable instructions for
7 implementing the method, the computer-executable instructions comprising:

8 program code means for receiving a proposed insurance claim that
9 includes a treatment code and a diagnosis code from the client computer, the
10 treatment code and diagnosis code having been entered to the client computer
11 by a health care provider prior to the health care provider performing health
12 care services;

13 program code means for determining whether the proposed insurance
14 claim is in condition to be paid based, including performing the act of
15 determining whether the treatment code and the diagnosis code correspond to
16 health care services that are approved for payment;

17 program code means for initiating transmission of information to the
18 client computer prior to the health care provider performing the health care
19 services, the information indicating to the health care provider whether the
20 proposed insurance claim is in condition to be paid;

21 program code means for performing, if the information indicates that
22 the proposed insurance claim is not in condition to be paid, the acts of:
23
24

1 receiving a revised proposed insurance claim that includes at
2 least one of a revised diagnosis code and a revised treatment code
3 entered by the health care provider; and

4 program code means for determining whether the revised
5 proposed insurance claim is in condition to be paid.
6

7 29. A computer program product as defined in claim 28, wherein the computer-
8 executable instructions further comprise program code means for initiating transmission of a
9 computer-displayable claim form to the client computer, the claim form including fields for
10 accepting the treatment code and the diagnosis code.
11

12 30. A computer program product as defined in claim 28, wherein the computer-
13 executable instructions further comprise:

14 program code means for receiving patient identification information from the
15 client computer, the patient identification information identifying an patient of the
16 health care provider;

17 program code means for determining whether the patient is a beneficiary of a
18 health insurance plan; and

19 program code means for initiating transmission of data to the client computer
20 indicating whether the patient is a beneficiary of a health insurance plan prior to the
21 health care provider performing the health care services for the patient.
22

23 31. A computer program product as defined in claim 30, wherein the program
24 code means for receiving patient identification information and the program code means for

1 initiating transmission of data operate by communicating with the client computer via the
2 Internet.

3
4 32. A computer program product as defined in claim 31, wherein the computer-
5 executable instructions further comprise program code means for maintaining
6 communication with the client computer during a time period between the receipt of the
7 proposed insurance claim and the transmission of the information to the client computer.

8
9 33. A method as defined in claim 28, wherein the act of determining whether the
10 proposed insurance claim is in condition to be paid comprises the act of determining that the
11 treatment code and the diagnosis code do not correspond to health care services that are
12 approved for payment.

13
14 34. A method as defined in claim 33, further comprising the acts of:
15 identifying, by the server system, the revised treatment code that, with said
16 diagnosis code, correspond to health care services that are approved for payment;
17 and

18 prior to the health care provider performing health care services, transmitting
19 the revised treatment code to the client computer, such that the treatment associated
20 with the revised treatment code can be included in the health care services when the
21 health care services are performed by the health care provider.

22
23 35. A method as defined in claim 33, further comprising the acts of:
24

1 receiving the revised treatment code from the client computer, the revised
2 treatment code having been entered to the client computer by a health care provider;
3 determining that the diagnosis code and the revised treatment code
4 correspond to health care services that are approved for payment; and
5 prior to the health care provider performing the health care services,
6 transmitting to the client computer information indicating to the health care provider
7 that the diagnosis code and the revised treatment code correspond to health care
8 services that are approved for payment.
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ABSTRACT OF THE DISCLOSURE

Methods and systems for interactively creating and submitting insurance claims and determining whether the submitted claims are in condition for payment by an insurer. A medical technician operating a client computer establishes communication with a remote server. The remote server transmits a claim form to the client computer for display to the medical technician. Using the claim form, the technician enters patient identification information, which is transmitted to the server to determine whether the patient is a beneficiary of an approved insurance plan. If the patient is a beneficiary, the technician can prepare an insurance claim using the claim form displayed by the client computer. The technician enters a diagnosis code and a treatment code representing the diagnosis and treatment of the patient. The diagnosis and treatment codes are transmitted to the remote server, which processes the codes to determine whether the claim corresponds to health care services that are approved for payment. If the insurance claim is not in condition for payment, the medical technician is notified. The medical technician can then amend the insurance claim as necessary and resubmit the claim.

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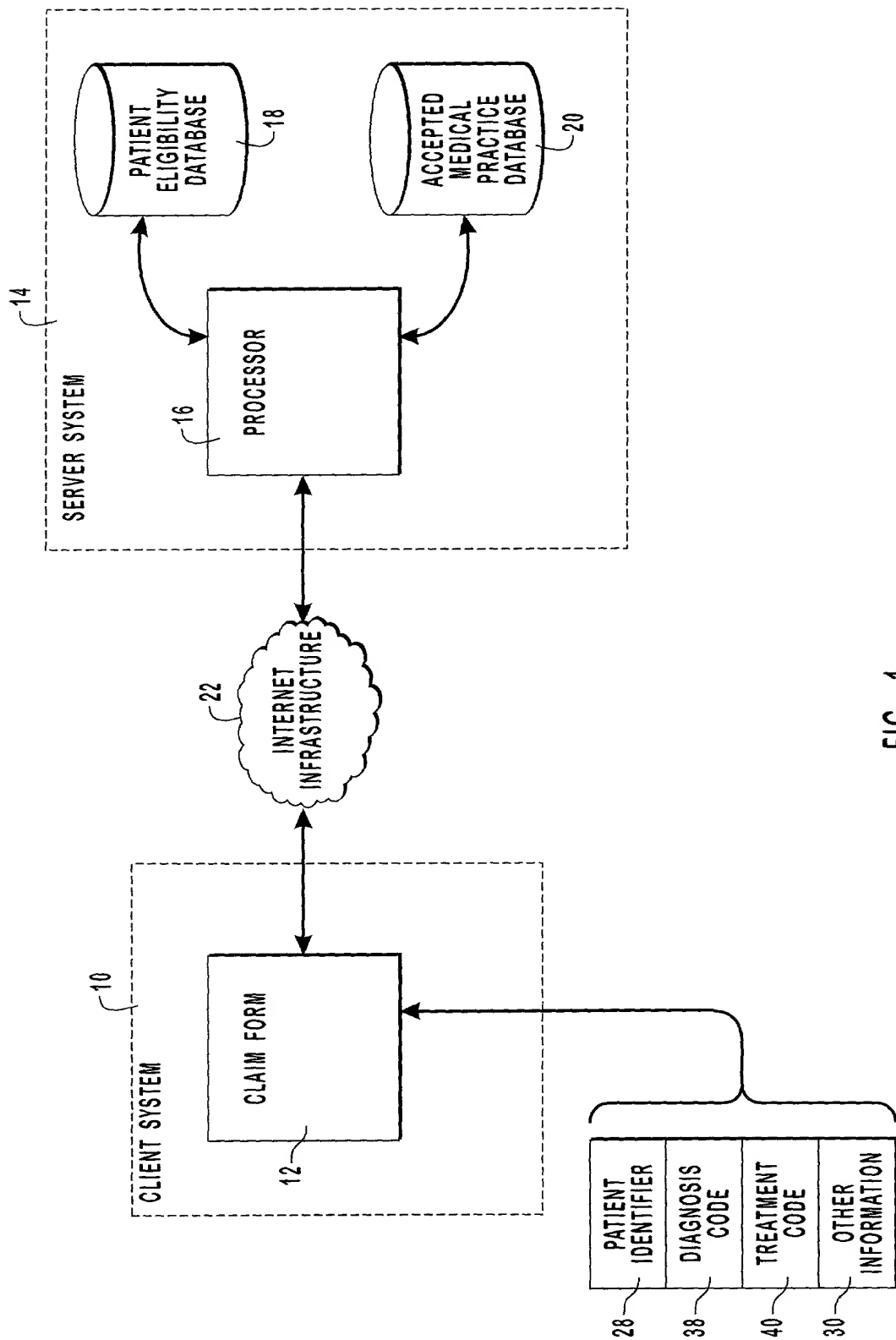


FIG. 1

12a

Health Care Claims Form

Plan I D	
Insured's I D	
Paitent's date of birth	- mm/dd/yy
Provider I D	

36 26 32 34

FIG. 2

12b

Health Care Claims Form

42 { Plan ID : 1234
 Insured : Doe, John 541XXXXX
 Patient : 01, Jane
 Provider: MISCELLANEOUS PROVIDERS

Please enter the Patient Dependent Number from above from above:

Last Name, First, Middle Initial, I.D.

Referring Physician

Service Provider

Diagnosis or Nature of Illness or Injury.

44 44

Dates of Service		Place	Type	Procedure, Service or Supplies		Diagnosis No	\$Charges
From	To	Svc	Svc	CPT	Modifier		

48 52

46

Patient's Account	Accept Assign?	Total Charge	54
	Yes <input type="radio"/> No <input type="radio"/>	Amount Paid	50
		Balance Due	56

FIG. 3

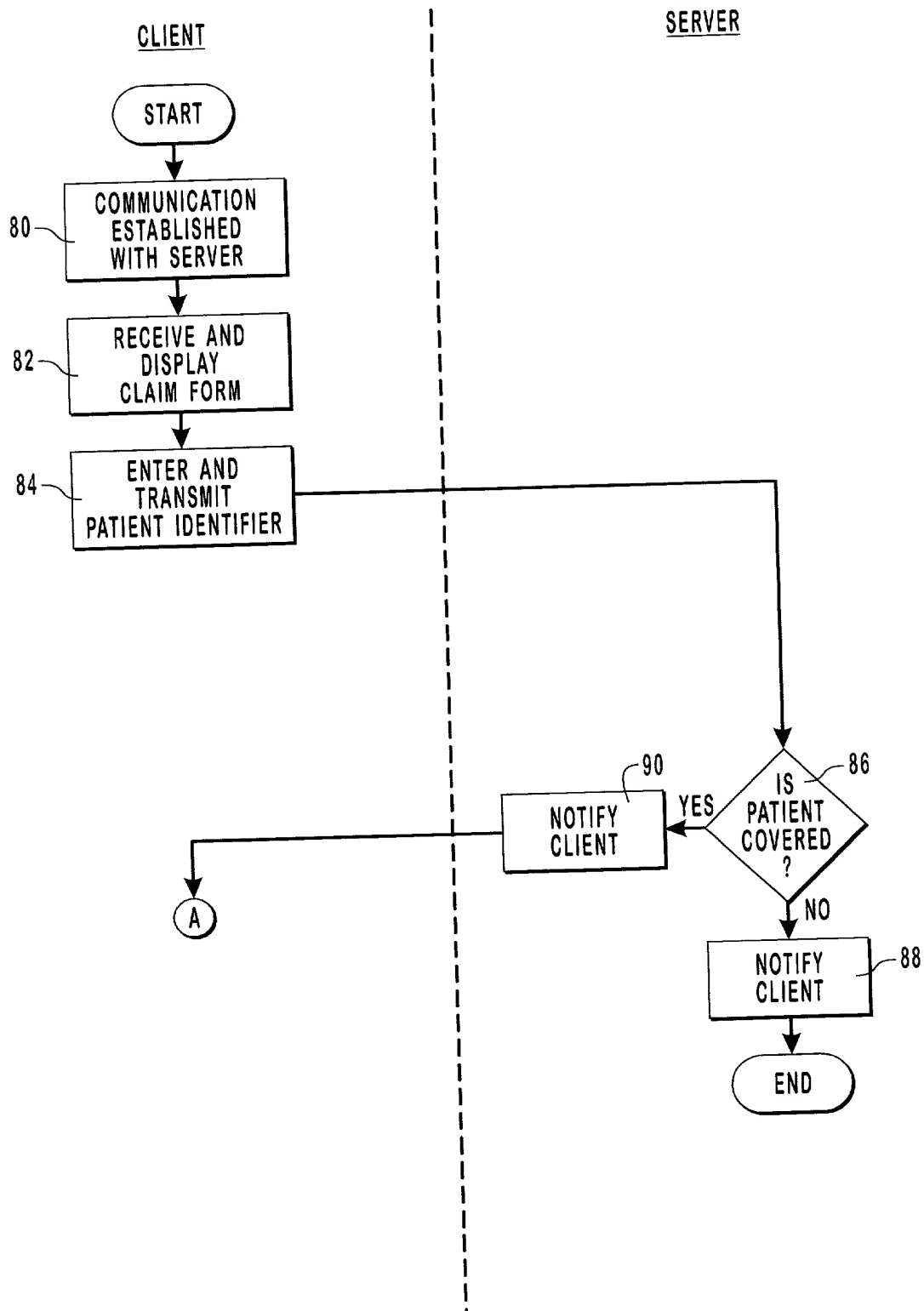


FIG. 4A

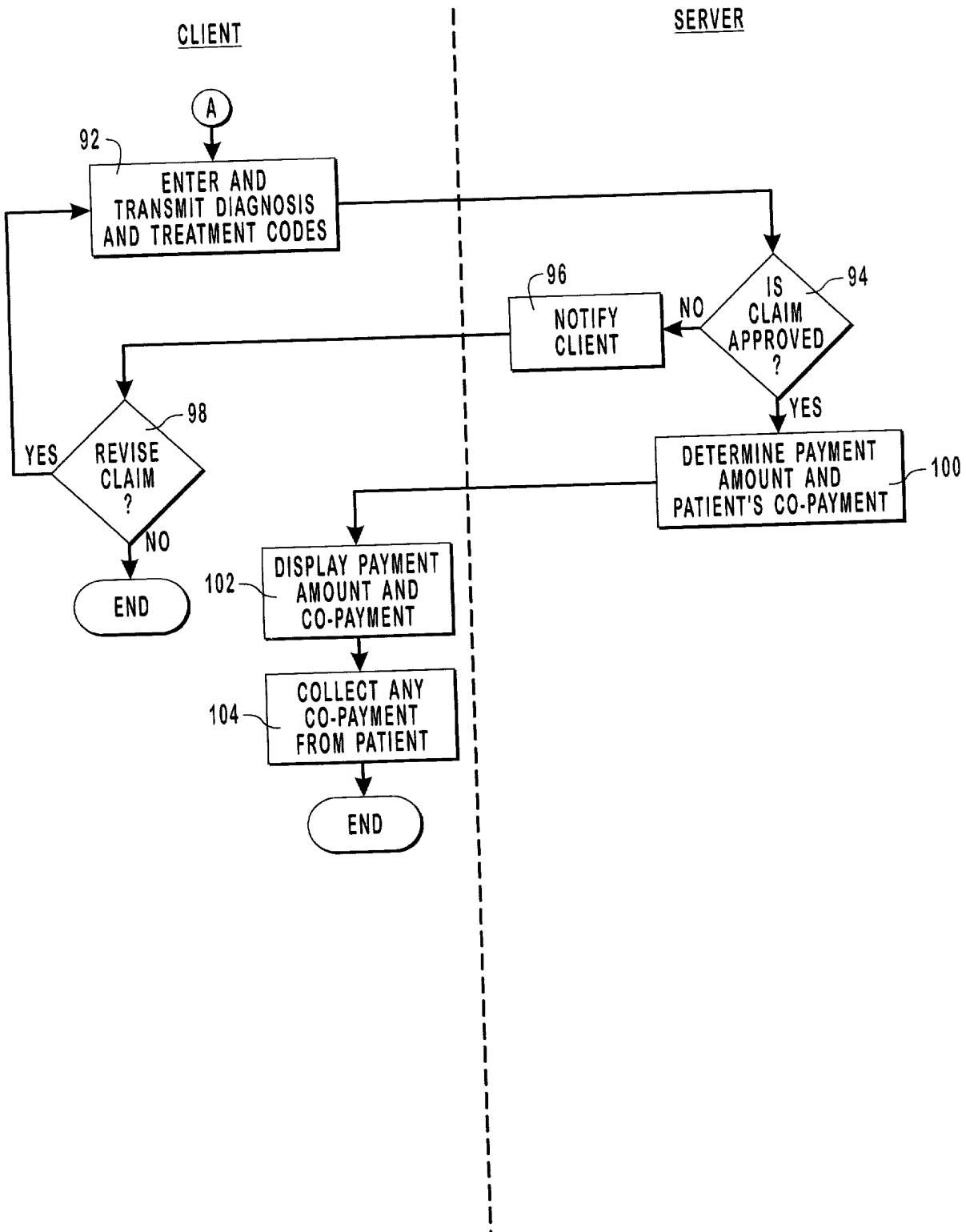


FIG. 4B

DECLARATION CLAIMING SMALL ENTITY STATUS
FOR A SMALL BUSINESS CONCERN

I, Wayne A. Provost, hereby declare: that I am President of P5, L.L.C., a limited liability company of the State of Utah and having a principal place of business at 1245 East Brickyard Road, Suite 310, Salt Lake City, UT 84106; I am empowered to act on behalf of P5, L.L.C.; and that P5, L.L.C. qualifies as a small business concern as defined in 13 C.F.R. § 121.3-18 and 37 C.F.R. § 1.9(d), for purposes of paying reduced fees to the Patent and Trademark Office under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of P5, including those of its affiliates, does not exceed 500 persons. I understand that, for purposes of this declaration, (1) the number of employees is the average over the previous fiscal year of the number of persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and that (2) two business concerns are considered to be affiliates of each other when one business concern either directly or indirectly controls or has the power to control the other, or when a third party or parties control or have the power to control both business concerns.

I further declare that all rights, title, and interest relating to the invention entitled "PROVIDER CLAIM EDITING AND SETTLEMENT SYSTEM," invented by Wayne A. Provost, Vaughn C. Cecil, John W. Kwant, Jr., and Brian E. Peterson, as described in the patent application filed concurrently herewith, have been conveyed to and currently remain with P5, L.L.C.

I acknowledge the duty to file, in the above-mentioned application or any patent issued in respect thereof, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of (1) the issue fee or (2) any maintenance

fee due after the date on which status as a small entity is no longer appropriate. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.

Signed at Salt Lake City, Utah this 10 day of November, 1998.

P5, L.L.C.

By:


Wayne A. Provost,
President

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DECLARATION, POWER OF ATTORNEY, AND PETITION

We, Wayne A. Provost, Vaughn C. Cecil, John W. Kwant, Jr., and Brian E. Peterson, declare: that we are citizens of the United States of America; that our residences and post office addresses are 6540 East Millcreek Canyon, Salt Lake City, UT 84109, 281 Red Williams Road, Crossville, TN 38555, 6908 Country Woods Circle, Midvale, UT 84047, and 1800 East 3990 South, Salt Lake City, UT 84112, respectively; that we verily believe we are the original, first, and joint inventors of the subject matter of the invention or discovery entitled "PROVIDER CLAIM EDITING AND SETTLEMENT SYSTEM," for which a patent is sought and which is described and claimed in the specification attached hereto; that we have reviewed and understand the contents of the above-identified specification, including the claims referred to, and that we acknowledge the duty to disclose information which is material to the examination of this application in accordance with Section 1.56(a) of Title 37 of the Code of Federal Regulations.

We declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the application or any patent issuing thereon.

We hereby appoint as our attorneys and/or patent agents: RICK D. NYDEGGER, Registration No. 28,651; DAVID O. SEELEY, Registration No. 30,148; JONATHAN W. RICHARDS, Registration No. 29,843; JOHN C. STRINGHAM, Registration No. 40,831;

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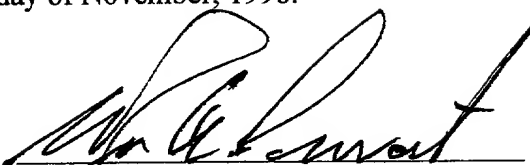
MICHAEL F. KRIEGER, Registration No. 35,232; BRADLEY K. DeSANDRO, Registration No. 34,521; JOHN M. GUYNN, Registration No. 36,153; CHARLES L. ROBERTS, Registration No. 32,434; GREGORY M. TAYLOR, Registration No. 34,263; DANA L. TANGREN, Registration No. 37,246; KEVIN B. LAURENCE, Registration No. 38,219; ERIC L. MASCHOFF, Registration No. 36,596; C. J. VEVERKA, Registration No. 40,858; ROBYN L. PHILLIPS, Registration No. 39,330; DAVID B. DELLENBACH, Registration No. 39,166; JOHN N. GREAVES, Registration No. 40,362, KEVIN K. JOHANSON, Registration No. 38,506; R. BURNS ISRAELSEN, Registration No. 42,685; MICHAEL T. SANDERSON, Registration No. 43,082; DAVID R. TODD, Registration No. 41,348; JESÚS JUANÓS i TIMONEDA, Registration No. 43,332; and STEPHEN D. PRODNUK, Registration No. 43,020, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. All correspondence and telephonic communications should be directed to:

Rick D. Nydegger
WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111

Wherefore, we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, declaration, power of attorney, and this petition.

Signed at Salt Lake City, Utah this 10 day of November, 1998.

Inventor:



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6540 East Millcreek Canyon
Salt Lake City, UT 84109

Signed at Salt Lake City, Utah this 10 day of November, 1998.

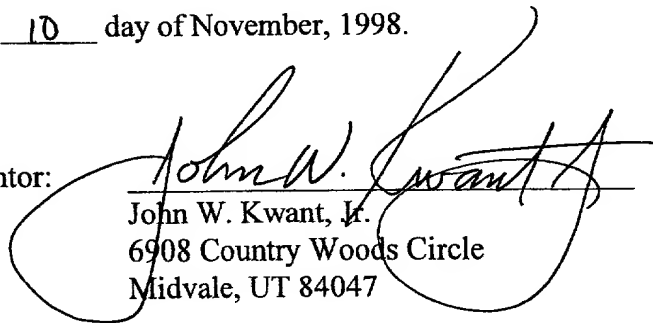
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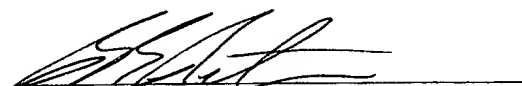
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Signed at Salt Lake City, Utah this 10 day of November, 1998.

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